

Course WLC-SQL1103: SQL Server Development Essentials

2-3 days, Instructor-led

Recommended Audience

This training is for those who have little or no knowledge of SQL Server and how it can be used and leverage its features for creating, developing and managing well-designed database. It will serve as a guide towards your path of becoming Database Developer and Database Administrator using Microsoft SQL Server. Knowledge gained specially in Database Design can be applied in any scenario without taking into consideration the platform of use or specific Database Product or Technology. Hence the topic on Data Architecture and Relational Database Design will provide a solid foundation for Database Designers, Developers and Administrators alike.

Prerequisites

You will need to have an Evaluation or Full Version of SQL Server 2005, 2008 or 2008 R2 running on ideally Windows Server 2008 or 2008 R2. Running on Windows 7 is also possible.

Topics

Part I: Building the Foundation

Chapter 1: Data Architecture

- Principles of Information Architecture
- Database Objectives
- Choosing the Database System 1. Type
 - a. OLTP
 - b. OLAP
- Best Practices of a Smart Database Design

Chapter 2: Database Design Principles

- Basics of Database
- Normalization and Design patterns
- Best Practices for OLTP and OLAP Database

Chapter 3: Introduction to SQL Server

- SQL Server as a Product
- SQL Server Features, Tools and Services
- SQL Server Configuration Manager
- Database Engine
 - c. SQL Server Agent
 - d. SQL Server Browser
 - e. Business Intelligence
 - SSIS
 - SSAS
 - SSRS
- SQL Server Management Studio

Chapter 4: Installing SQL Server 2008

- Capacity Planning
- Hardware Requirements
- Software Requirements
- Installing SQL Server
- Migrating to SQL Server
- Best Practices of Installing SQL Server

Chapter 5: Using SQL Server Management Studio

- Using SSMS to Connect to the different SQL Server Services
- Understanding Management Studio and the User Interface
- Creating SQL Server Projects and Simple TSQL Scripts
- How to run simple TSQL Scripts

Part II: Manipulating Data with SQL Statements

Unit 6: Creating and Managing Users

- How SQL Server run the Query Flow
- Understanding the FROM Clause
- Understanding the WHERE Clause
- Understanding the SELECT Clause
- SELECT Clause – from Simple to Advanced Forms
- Using ORDER BY Clause

Chapter 7: Merging Data using JOINS and UNIONS

- Understanding the use of JOIN Clause
- Using INNER and EQUIJOINS
- Using OUTER JOINS – LEFT JOIN and RIGHT JOIN
- Using SELF-JOINS
- Using CROSS JOINS
- Using UNION and UNION ALL
- Using INTERCEPT
- Using EXCEPT

Chapter 8: Including Data with SUBQUERIES and CTE's

- Understanding SUBQUERIES
- Using Simple SUBQUERIES
- Using CORRELATED SUBQUERIES
- Composable SQL Queries

Chapter 9: Data Aggregation

- Understanding Simple AGGREGATIONS
- Grouping within a Result Set
- Building CROSSTAB Queries
- Using CUBE
- Using ROLLUP
- Using GROUPING
- Building Cumulative Totals or RUNNING SUMS

Chapter 10: Using TSQL for Windowing and Ranking

- Windowing
- Ranking

Chapter 11: Data Projection thru VIEWS

- Understanding VIEWS
- Basic of VIEWS
- Creating Simple VIEWS
- Creating Complex VIEWS
- Locking Down the VIEW
- Using SYNONYMS

Chapter 12: Modifying Data

- Understanding DML Statements
- Using INSERT
- Using UPDATE
- Using DELETE
- Merging Data using MERGE Statements

- Returning Data

Chapter 13: Data Types, Expressions and Scalar Functions

- Building Expressions
- Understanding Functions
- Using SCALAR FUNCTIONS
- Using STRING FUNCTIONS
- Data Type Conversions
- Using CAST
- Using CONVERT

Part III: Creating Database and Database Objects

Chapter 14: Understanding DDL and DCL Statements

- Understanding CREATE Statements
- Using CREATE
 - a. CREATE DATABASE
 - b. CREATE SCHEMA
 - c. CREATE TABLE
 - d. CREATE VIEW
- Using ALTER
 - e. ALTER DATABASE
 - f. ALTER TABLE
 - g. ALTER SCHEMA
 - h. ALTER VIEW

Chapter 15: Understanding Advance Database Objects

- Understanding available Advanced Database Objects
- Using and creating STORED PROCEDURES
- Using and creating FUNCTIONS
- Using and creating TRIGGERS
- Using AFTER TRIGGERS

- Using INSTEAD OF TRIGGERS

Course Inclusions:

- Microsoft Official Curriculum (MOC) and/or Wizards Learning Courseware (WLC)
- Microsoft Certified Trainer (MCT)
- Lunch, AM and PM Snacks
- Certificate of Achievement
- Course Notes